

1 *Unlucky Lara*

2 **Lara thinks that she is unlucky.**

3 Every time Lara washes her hands at school, she uses the same basin. She believes that each time she washes her hands, and uses her 'favourite' basin, there is no soap. It seems to her that this happens to her more often than it happens to her friends.

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5 Lara's friend Tiffany supposes that maybe Lara uses the basin at school that is the most frequently used, so the soap runs out faster. Tiffany likes to use the basin furthest away from the door, because she thinks it's the least used. Lara admits she uses the basin closest to the door, because it's the closest.

1 Write down some ideas that will allow Lara and Tiffany to figure out which basin is the most used.

Answers will vary. Examples: Conduct a survey of frequency of basin use, or measure the volume, dimensions or amount of soap before school and after school and calculate the difference.

2 Before collecting any data, it is important to develop a **question** or **hypothesis** to investigate.

Write a question or hypothesis for Lara and Tiffany's investigation.

Answers will vary. The basin closest to the door is the most frequently used basin (and therefore run out of soap the quickest). The basin furthest away from the door is the least frequently used (and therefore run out of soap the slowest).

6	Basin	7	Fr equenc y
8	1 st (closest to the door)	9	## + ### I
10	2nd	11	III I
12	3rd	13	I
14	4 th (furthest from the door)	15	

16 **Method**

17 Lara and Tiffany decide to conduct a survey. Along with three friends, Lara and Tiffany make up a sample of 5 female students. They decide to survey their use of the basins for one school day. This table presents the results of the survey.

- 3 What are the **results** from Lara and Tiffany's survey? Write a paragraph describing the results.

The basin closest to the door is used the most frequently. The basin furthest away from the door was used zero times (the least frequently). There is a pattern showing that each basin is used less the further it is from the door.

- 4 **Discuss** with examples whether Lara and Tiffany's survey supports Lara's theory that she is unlucky, and Tiffany's theory on soap usage.

Lara's theory that she is unlucky because she does not have soap is unfounded. She chooses to use a basin that is the most frequently used, being closest to the door. Assuming that the more times a basin is used, the more soap is used, the basin Lara uses will always run out of soap before the other basins.

Tiffany's theory that Lara uses a basin that is more frequently used because it is closest to the door is correct and the results of the survey support Tiffany's theory.

- 5 Based on the results of Lara and Tiffany's survey, which basin would you use and why? Write a **conclusion** for your question/hypothesis (Q2) based on your results (Q3) and discussion (Q4).

I would use the basin furthest away from the door. The results of the survey show the most frequently used basin was the closest to the door. This supports my hypothesis. Conclusion can be drawn that the most soap is used in the basin that is the most frequently used. For a good supply of soap and a less frequently used basin, it would be best to use the basin furthest away from the door.

Extension:

- 6 Conduct your own survey to investigate Lara and Tiffany's theories.

Answers will vary.

Students could conduct a survey measuring the change of the quantity of soap across the day and compare basins. This would be a more direct measurement of soap use.